Faculty of Design

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Co-designing a walkable city for the elderly through system thinking approach

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CO-DESIGNING A WALKABLE CITY FOR THE ELDERLY

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LongevICITY

Social Inclusion for the Elderly
Through Walkability

Cross-disciplinary research approach, integrating skills, methodologies and tools ranging from Social Sciences, Design, Artificial Intelligence and Complex Systems Science.
Funded by Fondazione Cariplo (Grant No. 2017-0938)

The project LONGEVICITY

Future **cities** will be characterized by the growing presence of long-lived citizens and a high rate of automation in traffic dynamics.

How to foster the **social inclusion** and **active ageing** of the elderly in forthcoming **urban scenarios**?

- Walkability -

Walkability

"Walkability is the measure of the overall walking and living conditions in an area and it is defined as the extent to which the built environment is friendly to the presence of people walking, living, shopping, visiting, enjoying, or spending time in an area"

Proposed Walkability Strategy.
by Stantec Consulting Ltd. (2009)

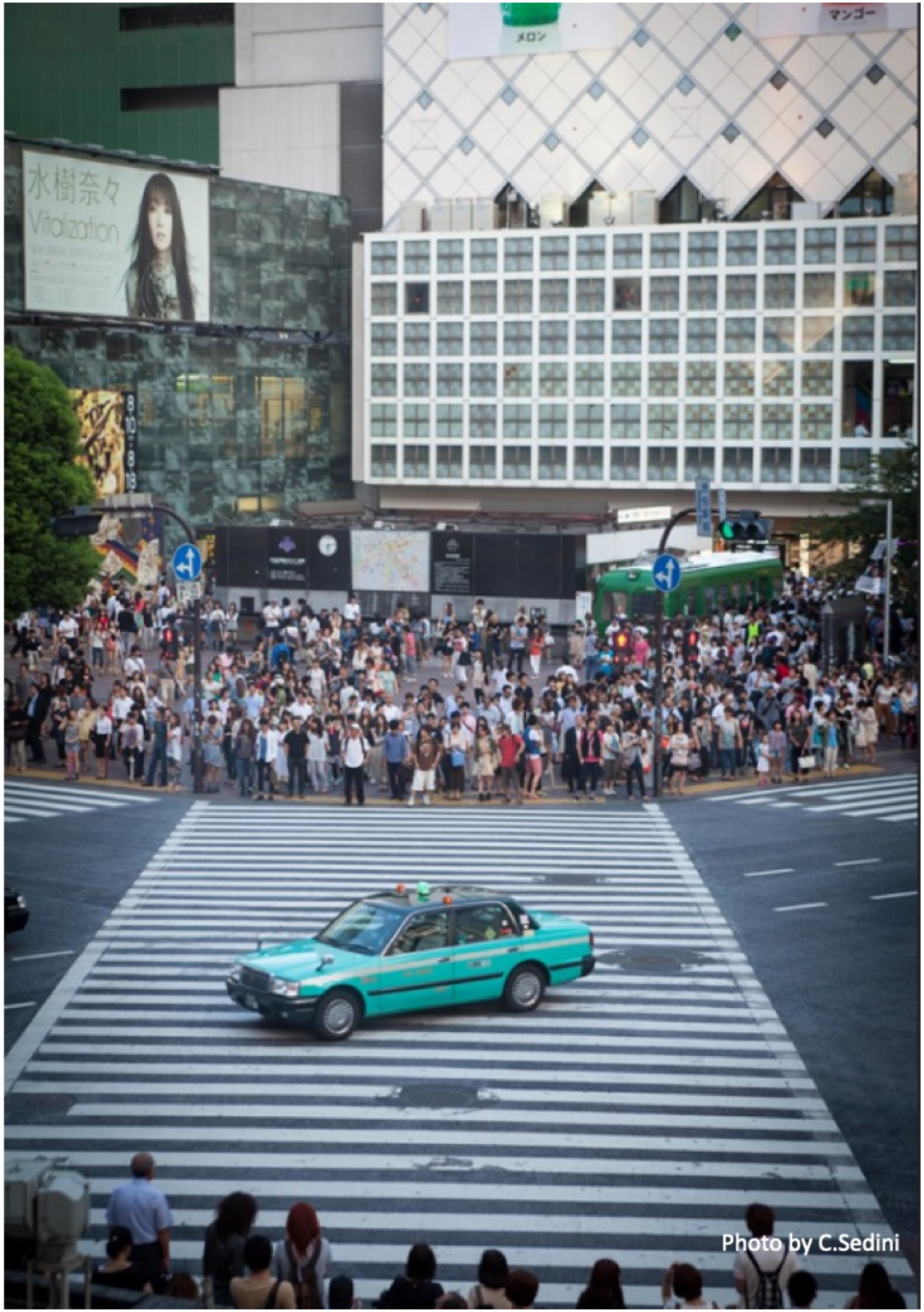
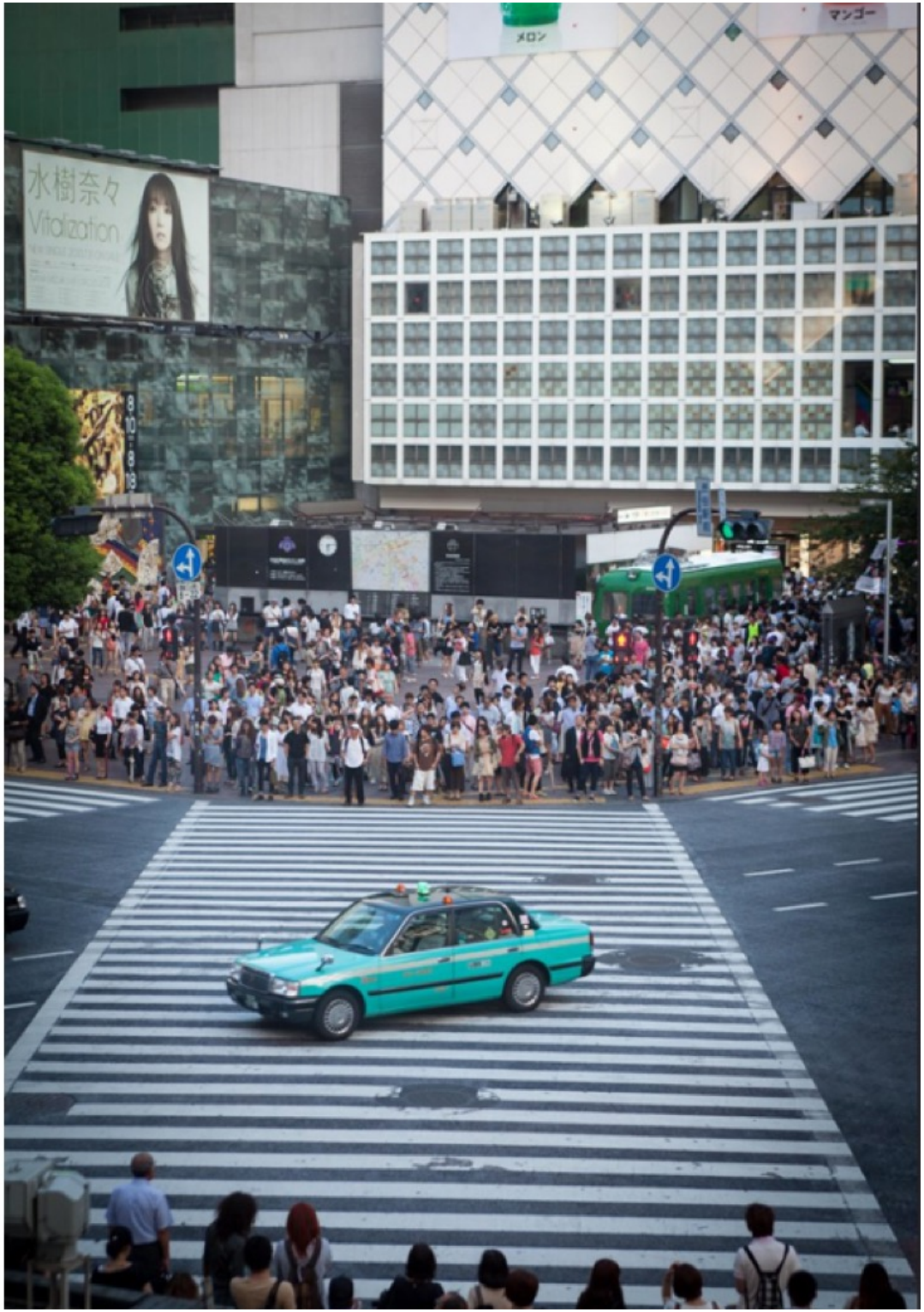


Photo by C.Sedini

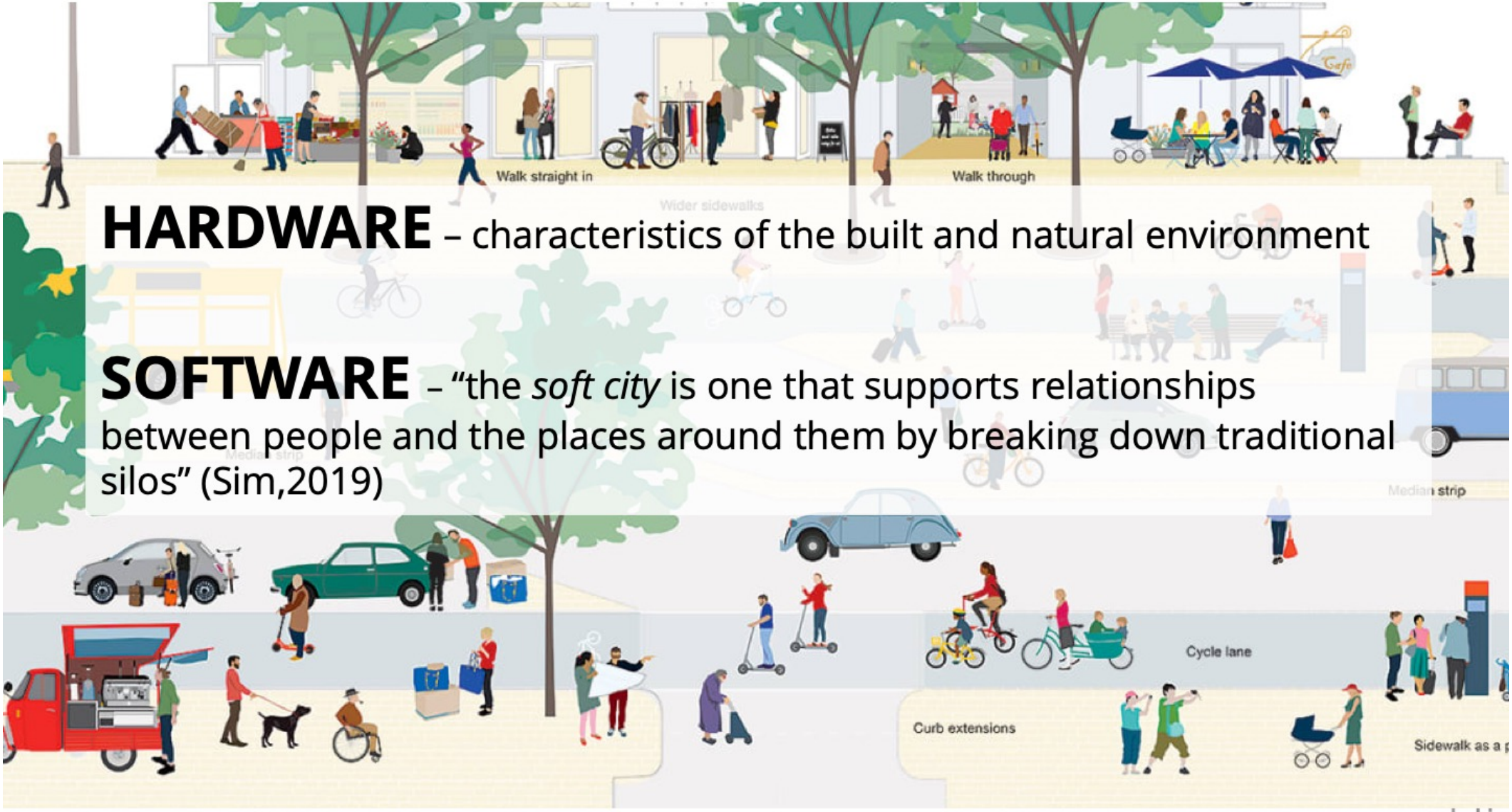
Walkability

In simple words:
Walkability indicates the **ability/possibility** to walk through a space;
walkable can be translated as “**pedestrian**”.

Walkability can be measured by evaluating the ability of a space to be suitable for walking.



A systemic approach to Walkability



HARDWARE – characteristics of the built and natural environment

SOFTWARE – "the *soft city* is one that supports relationships between people and the places around them by breaking down traditional silos" (Sim,2019)

Walkability conditions

General Theory of Walkability proposed by **Jeff Speck** (2013)
a space to be walkable has to satisfy four main conditions, it must be:

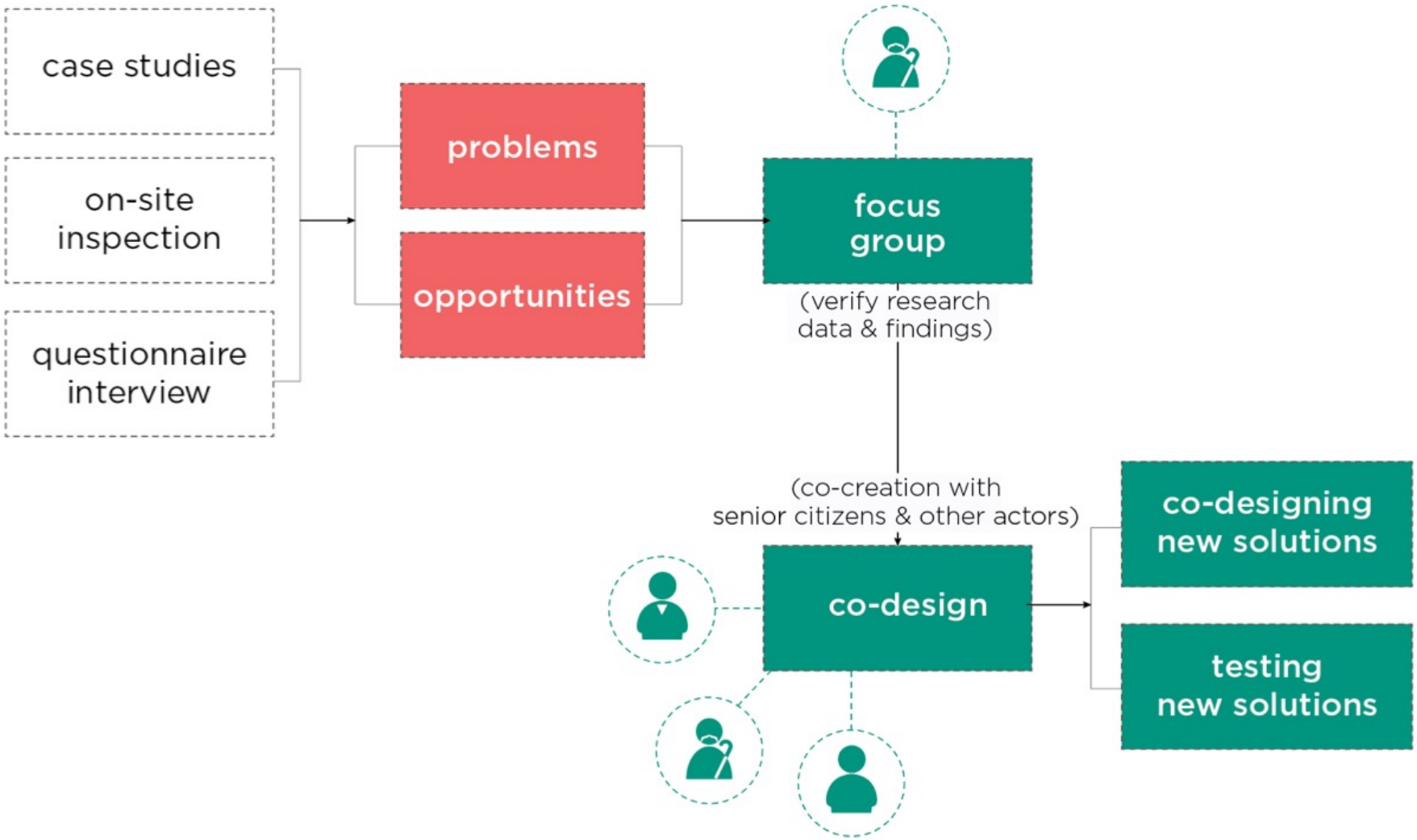
USEFUL|COMFORTABLE|SAFE|INTERESTING

The most important characteristics for a pedestrian-friendly environment are:
urban density
mixed use of the territory
relatively small neighborhoods
safe and recurring pedestrian crossing
continuous sidewalks

Our interpretation of Walkability

USEFULNESS
COMFORT
SAFETY
ATTRACTIVENESS
LEGIBILITY
PEOPLE

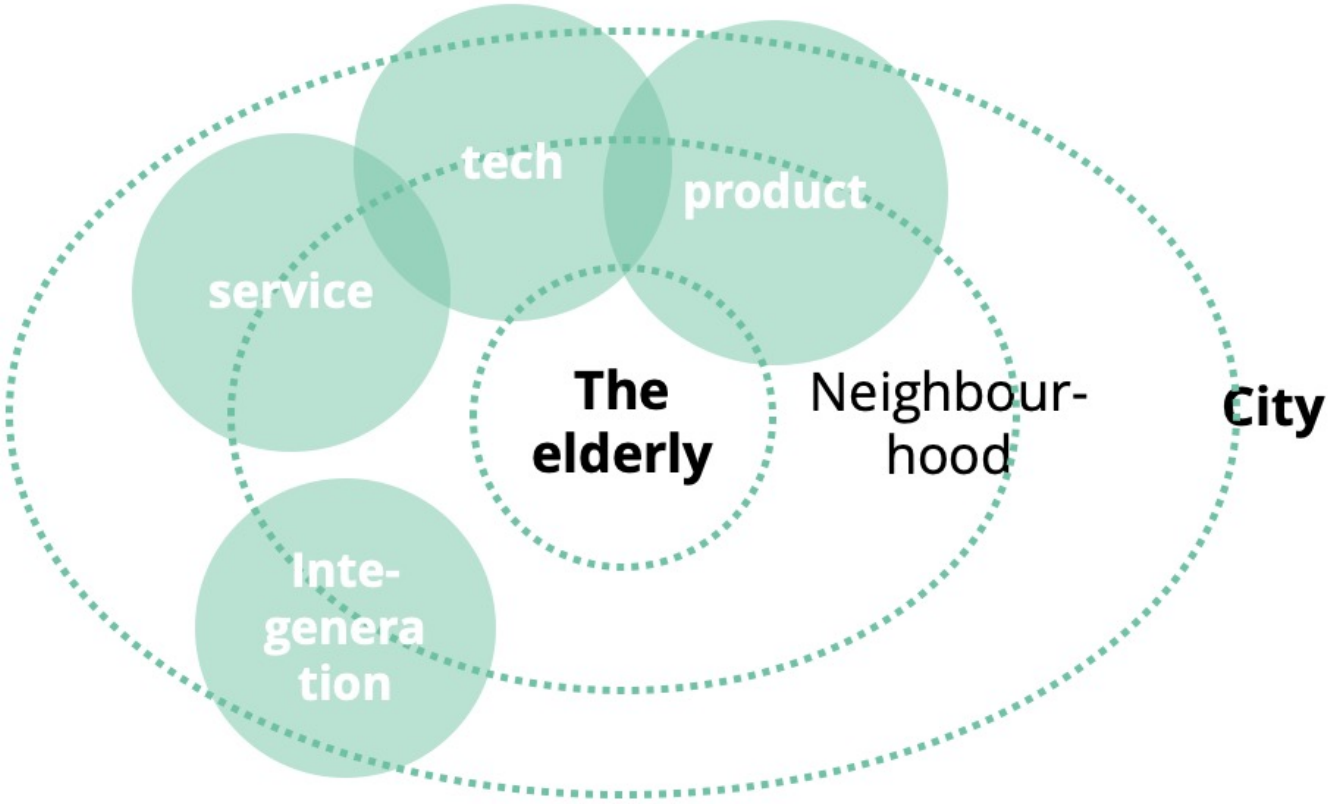
Systemic approach to research



Case studies

OBJECTIVE

- get inspirations and insights in specific areas that are relevant to Longevicity project
- identify the emerging trends and practices in areas relevant to “elderly” and “walkability”



Case studies

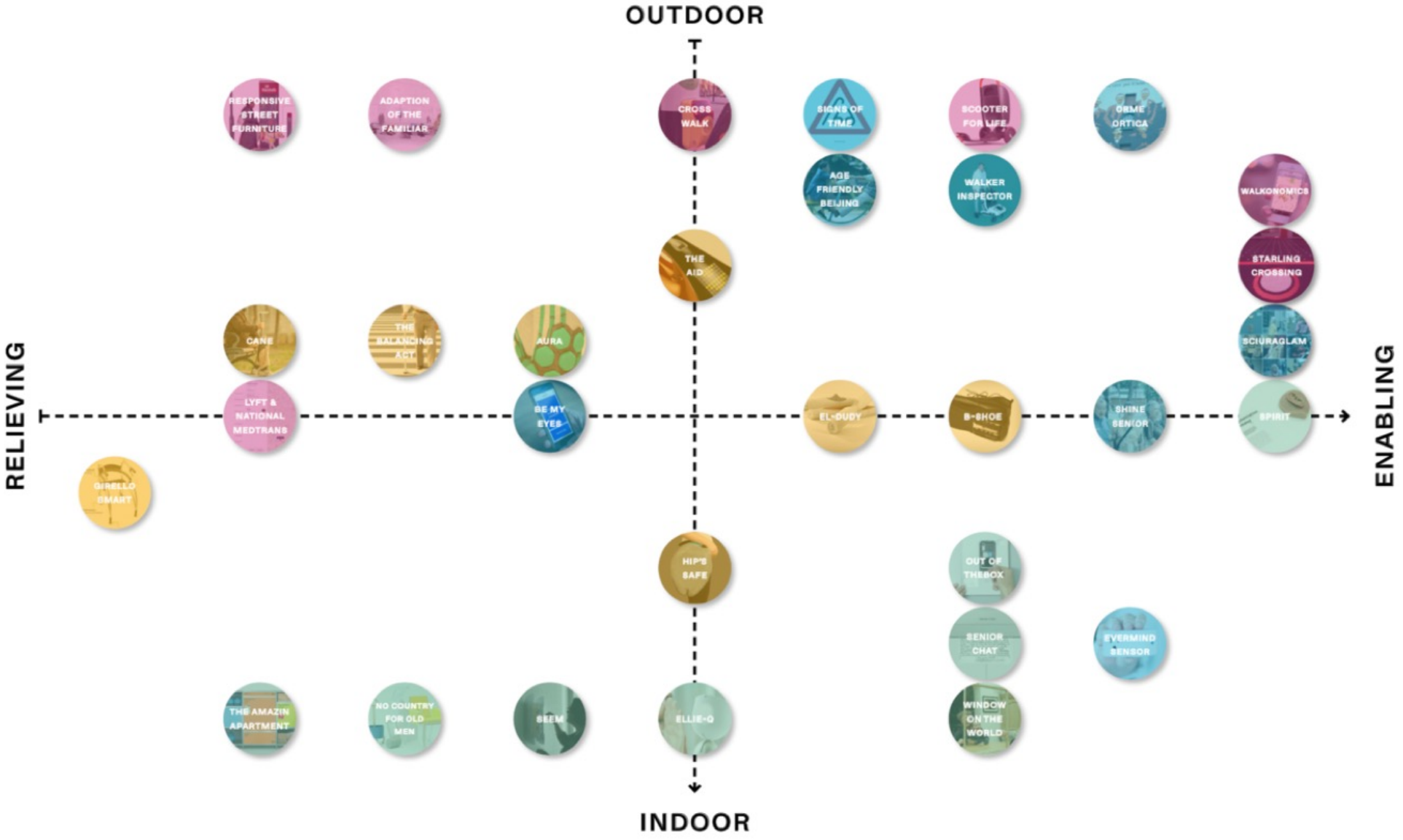
FIVE IDENTIFIED AREAS:

- **urban living**
- **smart tech aids**
- **active social life**
- **age friendly solutions**
- **visioning for future**

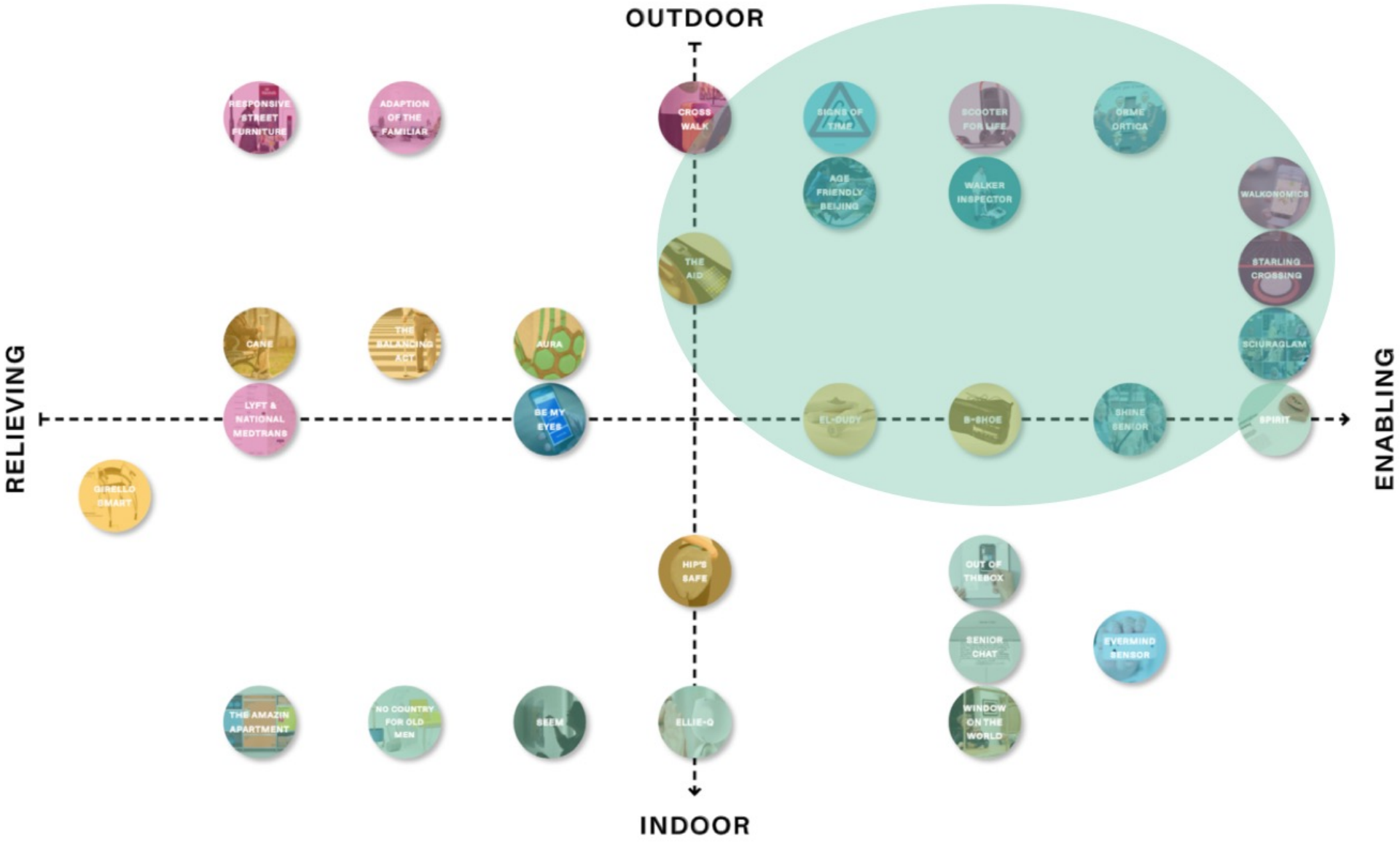
FOCUS

Reinterpret them with the indicators identified in the literature review on **“walkability”**

Case studies



Case studies



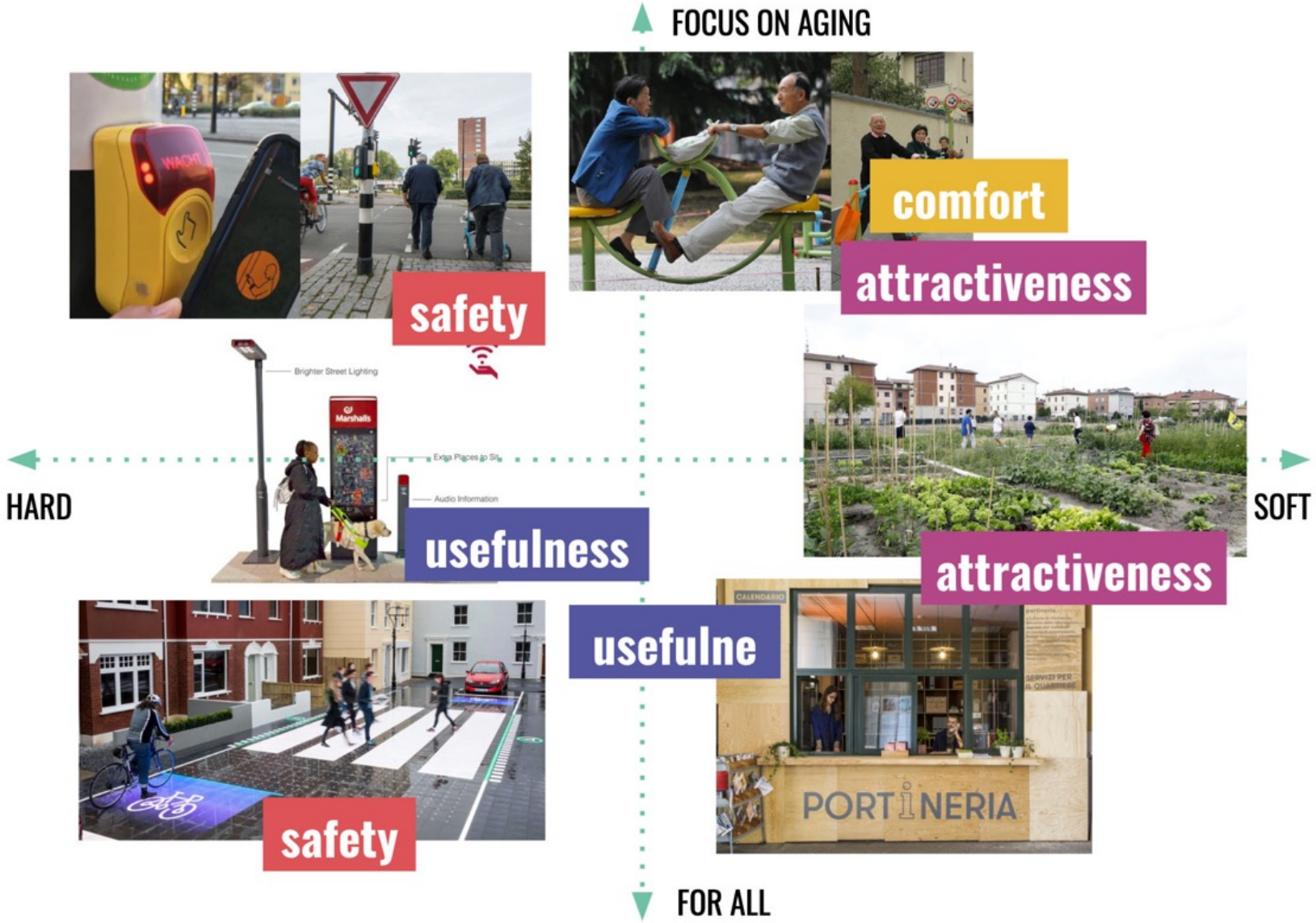
Case studies - hard

e.g. Responsive street furniture

Case studies soft+hard

e.g. Wellbeing and social life

Case studies research



On-site observation

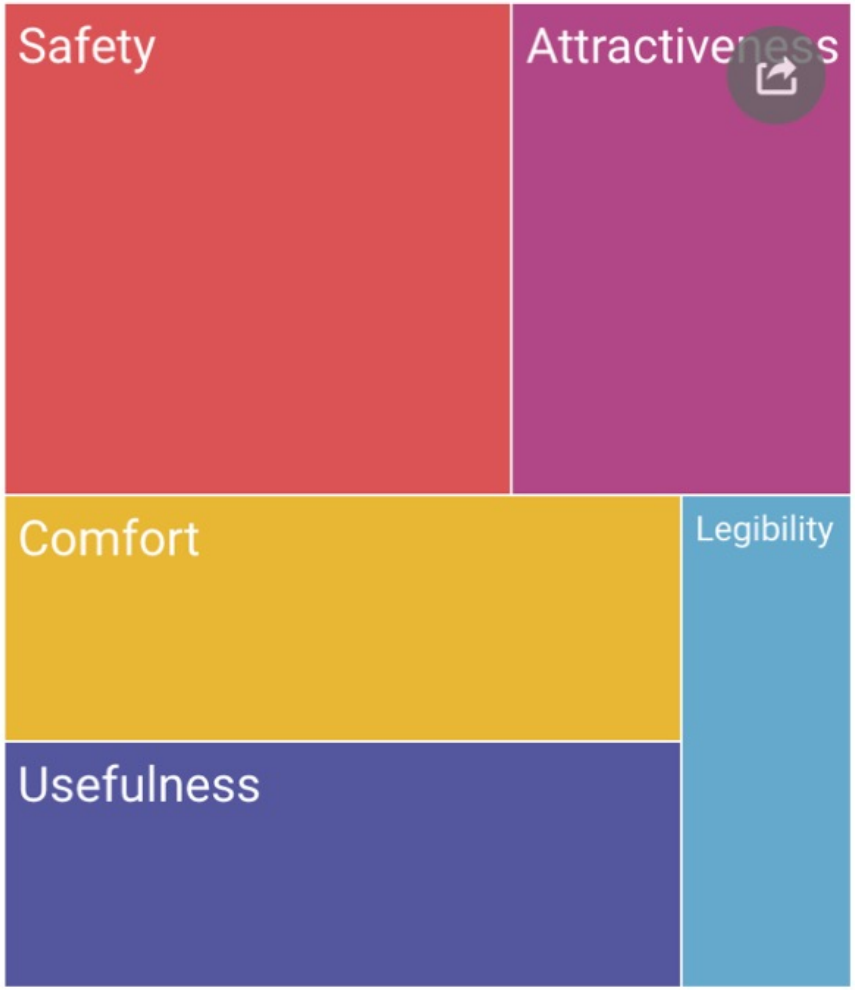
PADOVA street neighborhood
(City of Milan)

Sesto Rondò (Sesto San Giovanni,
Metropolitan City of Milan)

Observation protocol

USEFULNESS	COMFORT	SAFETY	ATTRACTIVENESS	LEGIBILITY	POPULATION
Typology: Pharmacy, Hospital, Medical Centres, School and/or Nursery, Libraries, Grocery shop, Bank, Post office, Municipal office, Police station, Bar and Restaurant, Recreative centre, Church/Oratory Theatre, Park, Kiosk/Newsstand, Bus/Metro/Tram stop, Market (open air or covered), Other.	Slope (of the street)	Type of crossing	Types of neighbourhood	Presence of wayfinding aids?	Typology: Elderly, Young people, Middle aged people, Family with kids, Business People, Policemen, Others
	Condition/maintenance of the street	Crossing aids	Feature of buildings	Are the signs readable and helpful?	What are they doing there?
	Width of the sidewalk	Is there any posted speed limit?	Frontage: how many buildings have front porches	Are the names of road(s) readable?	
	Sidewalk materials	Traffic control devices	How are the sidewalk areas are covered?	Are the numbers of the road and the name of buildings readable and easy to find?	
	Obstacle on the sidewalk	Lighting	Cleanliness of street: can you see any litter, rubbish, etc.?		
	General condition /maintenance of the sidewalk	Presence of security cameras	How is the smell of this area?		
	Are there ramps for people with reduced mobility (for entering the buildings)		Is this a very lively area?		
	Typologies of the public spaces		Is this a very noisy area?		
	Public/urban furniture presence		Parking: is there a parking structure/area visible on this area and how is it organised?		

Observation protocol



Usefulness (20%) + Comfort (20%)
+ Safety (30%) + Attractiveness (20%)
+ Legibility (10%)

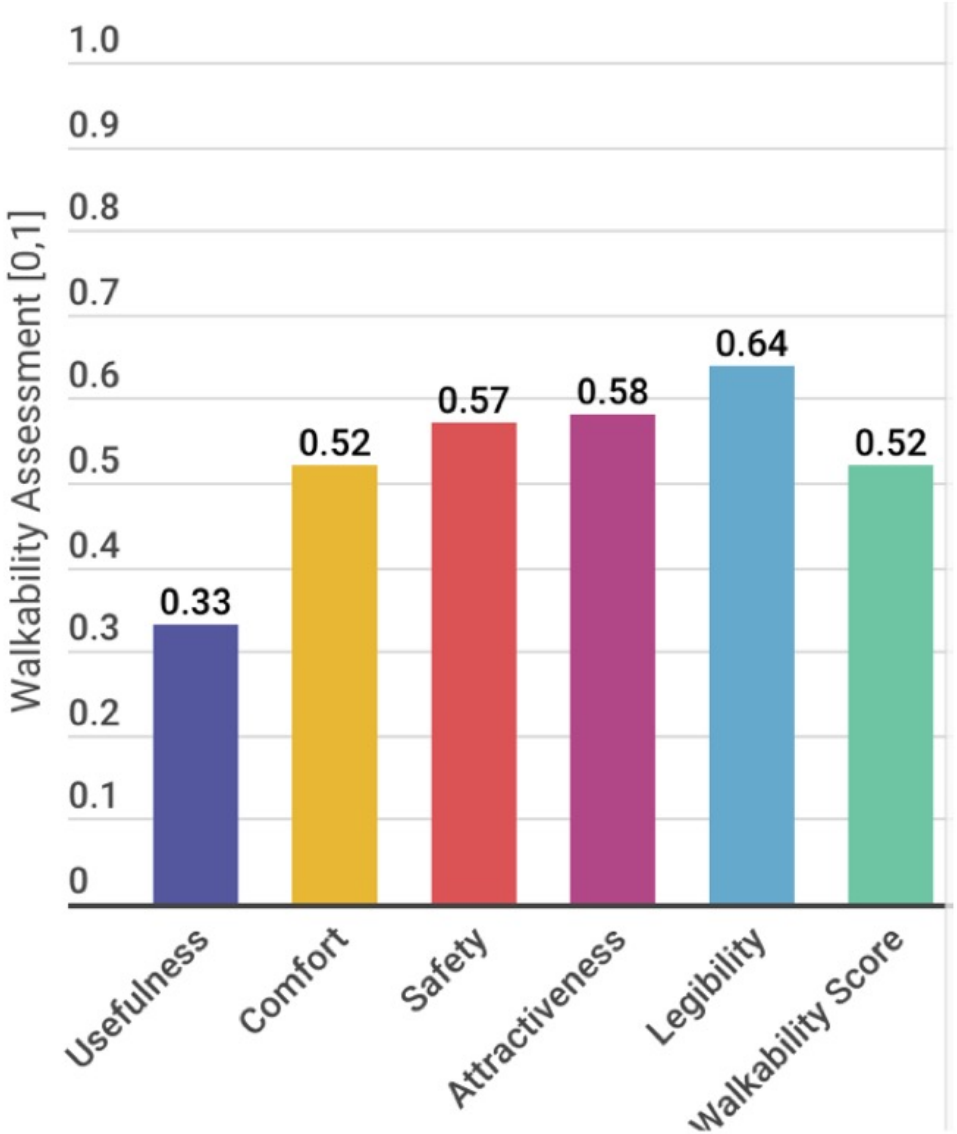
=

WALKABILITY (___/1)

Preliminary results| Walkability score

Sesto Rondò

Average
WALKABILITY 0.52



https://sites.google.com/unimib.it/longevicity/research-plan/territorial-analysis

USEFULNESS

SAFETY

COMFORT

ATTRACTIVENESS

LEGIBILITY

WALKABILITY

RSD08

Interviews

1. living conditions/habits

2. walking conditions/habits

3. opinions/habits about technology

Individual interview

Interview summary

11 people interviewed | 4 men – 7 women

The general satisfaction of interviewees is **pretty high**.

They generally walk through their neighborhoods (not all of them live in the area of interest).

Interview findings

USEFULNESS	COMFORT	SAFETY	ATTRACTIVENESS	LEGIBILITY

It is perceived as important and in general this area responds to several typologies of needs with the presence of different services, such as shops, library, parks, post office, etc.

Interview findings

USEFULNESS	COMFORT	SAFETY	ATTRACTIVENESS	LEGIBILITY

It is the most critical set of indicators. Problems with paving emerged (e.g. porphyry cobbles, slippery pavings, ...); absence of handrails, benches, public bathrooms, drinking fountains, etc

Interview findings

USEFULNESS	COMFORT	SAFETY	ATTRACTIVENESS	LEGIBILITY

Some problems for personal safety emerged and they concerned the presence of bicycles on sidewalks, the poor illumination especially in urban parks, roots of trees which brake the pavements, etc.

However, personal safety perception is pretty good.

Interview findings

USEFULNESS	COMFORT	SAFETY	ATTRACTIVENESS	LEGIBILITY

The presence of public squares and parks in the area is satisfying.

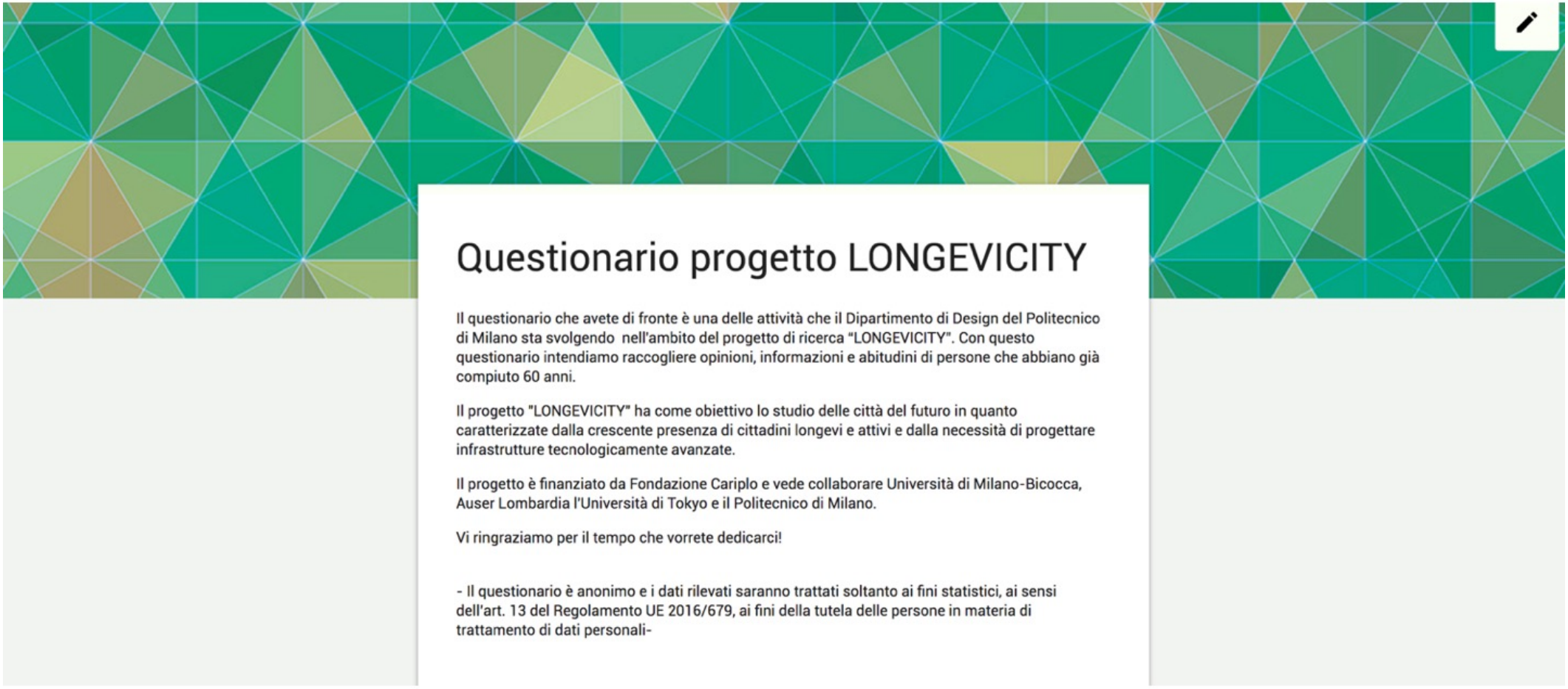
However, interviewees complained about the lack of maintenance and the current Municipal council interventions of dismantlement of several cultural associations.

Interview findings

USEFULNESS	COMFORT	SAFETY	ATTRACTIVENESS	LEGIBILITY

Some interviewees use navigation apps on the smartphone if they don't know the area.
Anyway, the majority of them know the neighborhood very well.
They suggested to have streets indications similar to those available in the subway line.

Online+Offline Questionnaire



Questionario progetto LONGEVICITY

Il questionario che avete di fronte è una delle attività che il Dipartimento di Design del Politecnico di Milano sta svolgendo nell'ambito del progetto di ricerca "LONGEVICITY". Con questo questionario intendiamo raccogliere opinioni, informazioni e abitudini di persone che abbiano già compiuto 60 anni.

Il progetto "LONGEVICITY" ha come obiettivo lo studio delle città del futuro in quanto caratterizzate dalla crescente presenza di cittadini longevi e attivi e dalla necessità di progettare infrastrutture tecnologicamente avanzate.

Il progetto è finanziato da Fondazione Cariplo e vede collaborare Università di Milano-Bicocca, Auser Lombardia l'Università di Tokyo e il Politecnico di Milano.

Vi ringraziamo per il tempo che vorrete dedicarci!

- Il questionario è anonimo e i dati rilevati saranno trattati soltanto ai fini statistici, ai sensi dell'art. 13 del Regolamento UE 2016/679, ai fini della tutela delle persone in materia di trattamento di dati personali-

Online+Offline Questionnaire

How important are the following indicators in the evaluation of a neighborhood livability *(1-5 score)*

USEFULNESS	**5 (51%)**
COMFORT	**5 (52,4%)**
SAFETY	**5 (64,3%)**
ATTRACTIVENESS	**5 (42%)**
LEGIBILITY	**4.5 (37.5%)**
PEOPLE	**4 (45.2%)**

Walking activity

INSPIRATIONAL QUESTIONS

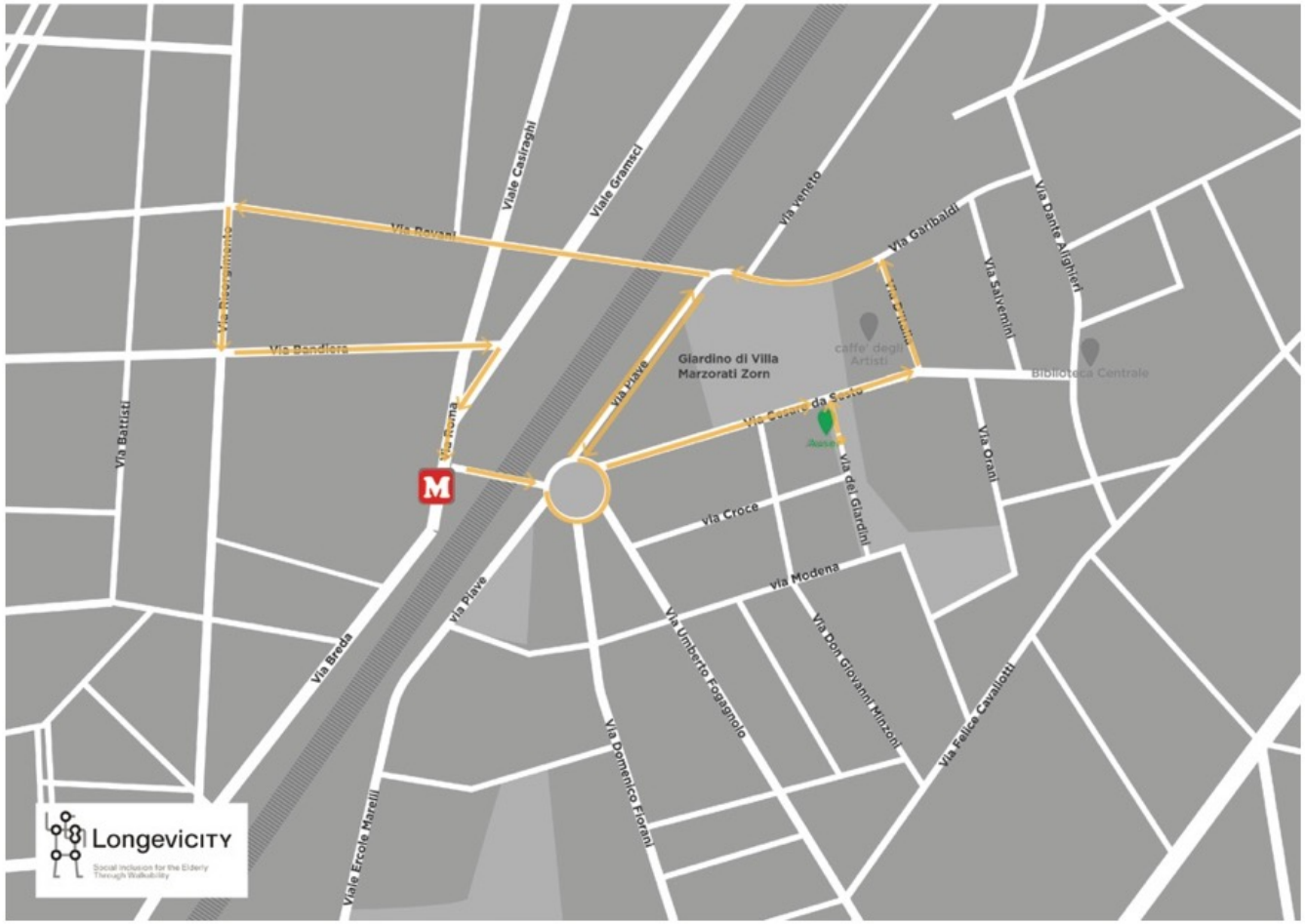
Which **spaces** in this path are for you the most **important** and those you **are very proud of**?

Do you own special **memories** about some of these places?

Are there important **historical sites** on this path?

Where do you fell more **comfortable**? Where you don't? Why?

Are there places that you **would like to be changed**? Why?

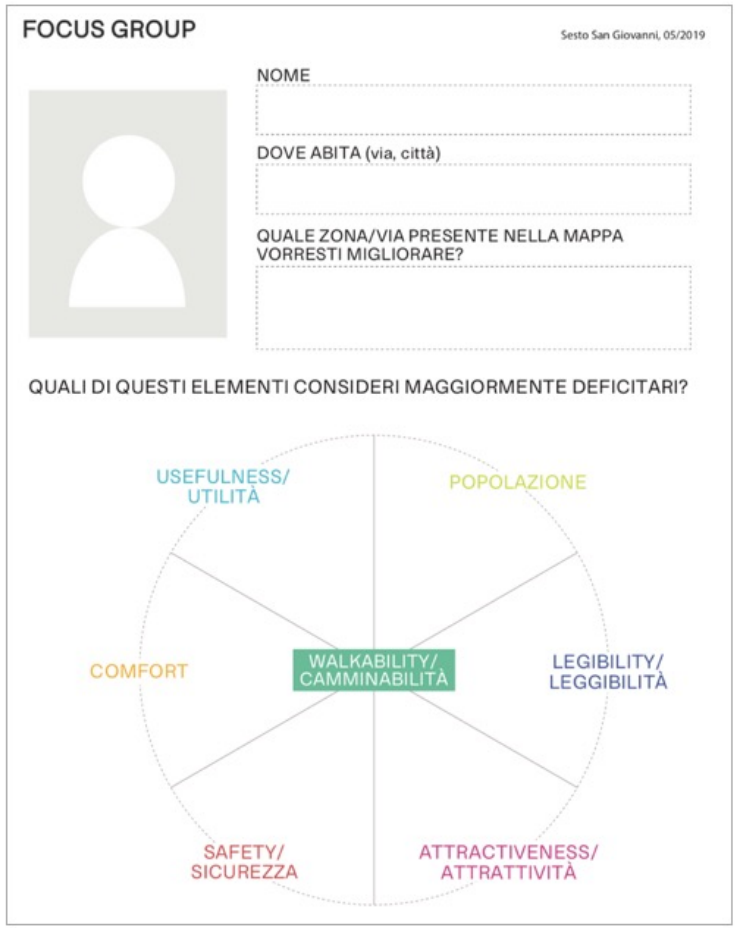


Walking activity

Focus Group

Selection

of areas which present problems from the *walkability* point of view



Design

to improve walkability. Choose the most important *features*.

USEFULNESS

poste italiane	comune	ufficio di polizia	bar & ristorante
centro ricreativo	chiesa	teatro	parco

COMFORT

parco/ giardino	spazio giochi	spazio pubblico aperto	natura
panchina	bagno pubblico	cestino per rifiuti	fontana

SAFETY

incrocio zebra	segnali stradali	ponte cavalcavia	sotto-passaggio
aiuto di attraver-samento	segnale pedonale	sparti-traffico	pulsante per attraversare

ATTRACTIVENE

zona residenziale	zona educativa	zona commerciale	zona turistica
zona di natura	zona industriale	uffici	

LEGIBILITY

aiuti per orientarsi	segni utili & leggibili	nomi delle strade leggibili	numeri civici leggibili

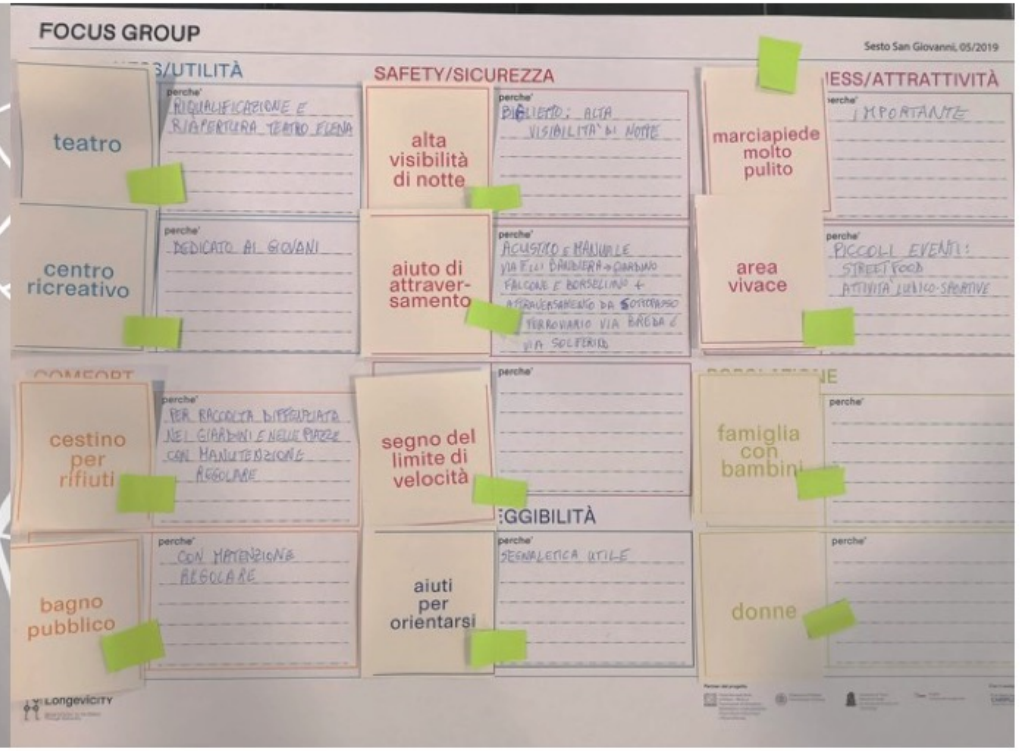
POPULATION

uomini	donne	stranieri	italiani

Focus group outcomes

Identification of:

- three different critical areas
- elements for their improvement



Problems

•Disconnected / unsafe paving
•Poor lightning
•Poor maintenance of subway stations and underpasses
•Bicycle on sidewalks
•Lack of urban furniture (benches)
•Absence of public toilets
•Trash bins inefficient design
•High costs of local shops
•Impoverishment of the local cultural offer (especially from local associations) / lack of information
•Risk of being “ghettoized”

Opportunities

•Identification of a mile to experiment on («Walkable Mile»)
•Openness to the others in terms of age, gender, nationality
•(Need for an) Active life both from a physical and mental point of views

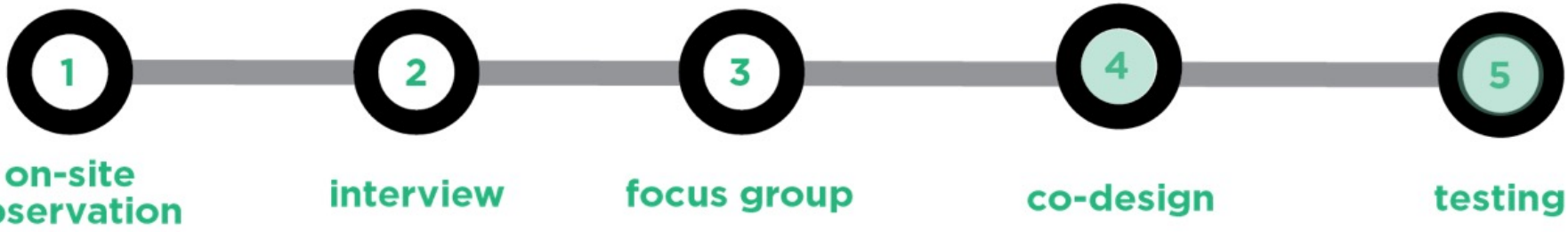
Research criticalities

•Small number of participants who might not be representative of seniors target (the questionnaire could help us with this)
•Seems that all the walkability factors are equally important (we should have asked them to make a choice – we will)
•Impossibility to arrive to an actual implementation of co-designed proposals (risks of letting participants down)

Where the systemic approach lies on

- In the project **organization** and **partners**
- In the **approach of the project** (city as an **ecosystem**)
- In the project **scalability**
- In the project **impacts sacalability** (**wellbeing** scalability)

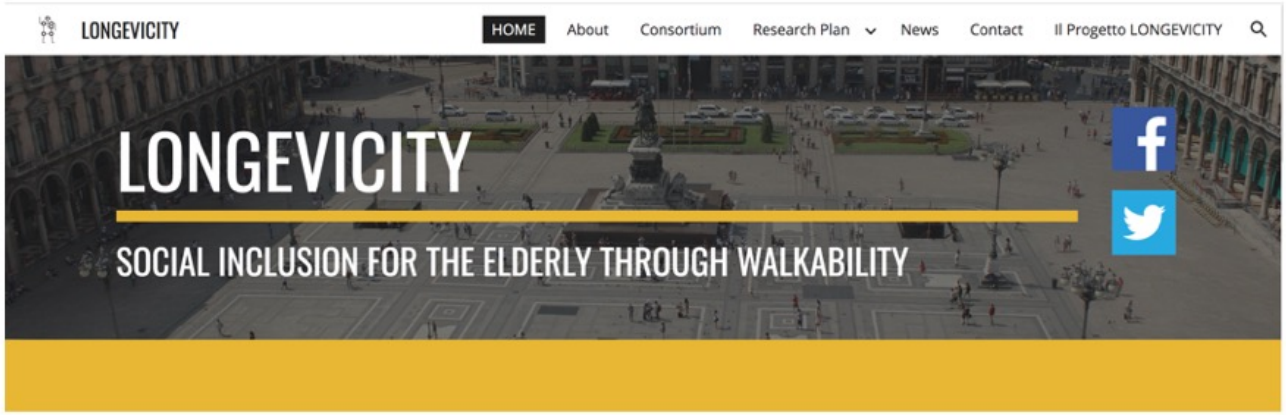
Next steps



1	2	3	4	5
understand the level of walkable of our neighbourhood	tell us your stories, experiences and needs	let's discuss together the possible future of our neighbourhood	let's build a more walkable neighbourhood through co-creation	let's verify the impacts of our solution

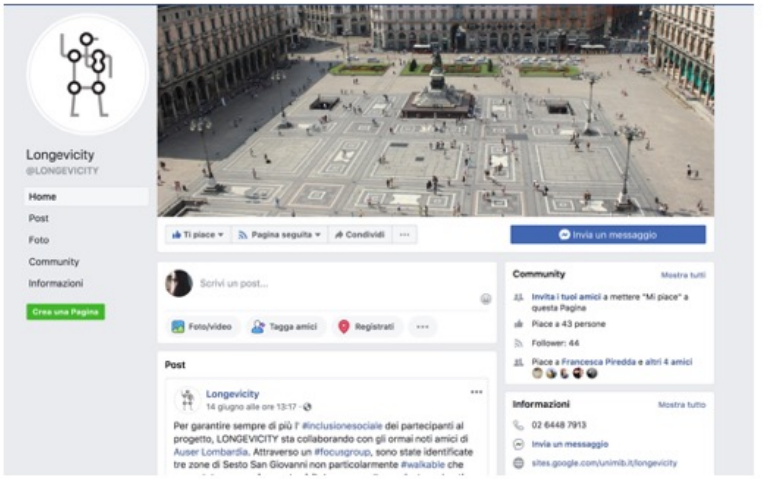
Longevicity online

Webpage

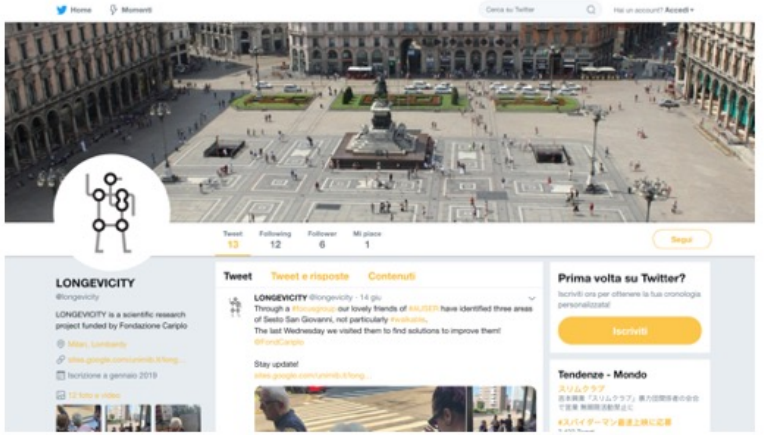


https://sites.google.com/unimib.it/longehttps://sites.google.com/unimib.it/longevicity/home?authuser=0vicity/home?authuser=0

Facebook @LONGEVICITY



Twitter @longevicity



Thank you

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